

IN THE CLAIMS:

Please cancel claim 26 and amend claims 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 39, 43 and 45 as follows:

26. (canceled).

27. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated according to claim 1, comprising a device for plasma generation whereby said plasma generates a vibration excitation energy and a vibration sensor arranged so as to measure the vibrations emitted by the object to be treated, during the plasma surface treatment process.

28. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated according to claim 1, comprising a device for plasma generation and a laser system that can emit a laser beam across a wall of the object to be treated, and a sensor for the reflected laser beams or laser beams crossing the wall in order to detect the number of photons emitted by non-linear effects during passage of the laser beam across the surface treated, or the decrease in the flux of primary photons caused by their recombination due to non-linear effects.

29. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated according to claim 1, comprising a device for plasma generation and a liquid bath for immersion of the objects to be treated during the plasma surface treatment.

30. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated ~~according to claim 13~~, further comprising an enclosure with a section intended to house the objects to be treated, and a section of piston chamber, the sections being separated by a piston, the piston being able to be rapidly moved within the enclosure toward the objects to be treated in order to compress the process gas surrounding the objects to be treated to a pressure above the critical pressure of plasma creation in the given process gas.

31. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated ~~according to claim 14~~, further comprising ~~comprises~~ an enclosure with a section housing the objects to be treated, and a section of a chamber in compression comprising a compressed process gas, where the sections of the enclosure are separate by a wall that can be removed or destroyed.

32. (currently amended): Device according to any one of claims ~~26~~, 28 to 31, further comprising a vibration sensor arranged so as to measure the vibrations emitted by the object to be treated, during the plasma surface treatment process.

33. (currently amended): Device according to any one of the claims ~~26~~, 27, 29 to 31, further comprising a laser system that can emit a laser beam across a wall of the object to be treated and includes a sensor for the reflected laser beams or laser beams crossing the wall in order to detect the number of photons emitted by non-linear effects during passage of the laser beam across the surface treated, or the decrease in the flux of primary photons caused by their recombination due to non-linear effects.

34. (currently amended): Device according to any one of the claims ~~26~~27 to 28, further comprising a device for cooling the object to be treated, by a flow or projection of a fluid over the object to be treated.

35. (currently amended): Device according to ~~the preceding~~ claim 34, wherein the cooling device blows air or another gas over the object to be treated, during or just after plasma application to the surface to be treated.

36. (currently amended): Device according to claim ~~27~~26, wherein it comprises a liquid bath for immersion of the objects to be treated, during the plasma surface treatment.

37. (original): Device according to claim 27, wherein the device for plasma generation comprises an electrode that can be moved relative to the object to be treated.

38. (original): Device according to claim 27, wherein the device for the plasma generation includes an electrode comprising a duct for gas feed.

39. (currently amended): Device according to ~~the preceding~~ claim 38, wherein the electrode comprises a plurality of gas feed ducts.

40. (original): Device according to claim 38, wherein the electrode comprises a rotating feeding head onto which the duct or ducts of process gas supply for the treatment of essentially axisymmetric containers are mounted.

41. (original): Device according to claim 38, wherein the angle of inclination of the process gas supply ducts is adjustable so that the angle of incidence of the process gas can be adjusted relative to the surface to be treated.

42. (original): Device according to claim 38, wherein the process gas supply ducts for the treatment of essentially axisymmetric containers are essentially arranged in the form of a cone for distributing the process gas in an essentially axisymmetric manner.

43. (currently amended): Device for the realization of a surface treatment process by creation of a plasma and application of said plasma against a surface to be treated ~~according to claim 1~~, comprising a device for plasma generation for electric discharge with an electrode in the form of a conducting liquid jet that can be directed against one wall of the object to be treated, on the side opposite to the surface to be treated.

44. (original): Device according to claim 27, further comprising means for recording and checking the plasma parameters during the treatment.

45. (currently amended): Device according to ~~the preceding~~ claim 44, wherein the means for recording and checking the parameters are able to record and/or check a rising flank of the electric voltage and/or electric current pulse.

46. (original): Device according to claim 44, wherein the means for recording and checking the parameters are able to record and/or check the amplitude and length of the pulses as well as of the pause between pulses.

47. (original): Device according to claim 44, wherein the means for recording and checking the parameters are able to record and/or check the amplitude and frequency of the acoustic vibrations emitted by the object to be treated.

48. (original): Device according to claim 44, wherein the means for recording and checking the parameters are able to record and/or check the temperature of the object to be treated.

Respectfully submitted,

By: Clifford W. Browning
Clifford W. Browning
Reg. No. 32,201
Woodard, Emhardt et al. LLP
Bank One Center/Tower
111 Monument Circle, Suite 3700
Indianapolis, Indiana 46204-5137
(317) 634-3456

#358564